

CLAIMS

1. A guide apparatus for guiding a movement of a plate-like object (3) with respect to a main body (1) between a set position and a preparation position in front of or behind said set position, and between said preparation position and a non-set position to the left or right of said preparation position, comprising:
 - (a) a runner (15; 88) mounted on at least one of upper and lower edge portions of said plate-like object;
 - (b) a main rail including a main track (100), said main track (100) extending to the left and right, and said main rail supporting said plate-like object in said non-set position in such a way that said runner rides on said main track; and
 - (c) a rotatable member (50; 81) supported by said main body so that said rotatable member can rotate between a first rotation position and a second rotation position about a rotation axis extending to the left and right, including a supporting surface (51y; 82a) and an auxiliary track (51x; 82b), supporting said plate-like object in said set position in such a way that said runner rides on said supporting surface when said rotatable member is in said first rotation position, and supporting said plate-like object in said preparation position in such a way that said runner rides on said auxiliary track, which becomes continuous with said main track, when said rotatable member is in said second rotation position.

2. A guide apparatus according to claim 1 wherein:

 said main body has an opening (2x) formed therein, said opening (2x) being closed by said plate-like object (3) in said set position, and said opening (2x) being open when said plate-like object is in said non-set position.

3. A guide apparatus according to claim 1 further comprising:

a holding mechanism (60; 83) for holding said rotatable member in said second rotation position.

4. A guide apparatus according to claim 1 wherein:

said rotatable member (50) has a rail portion (51) formed on a distal edge thereof, said rail portion having a substantially circular cross-section and extending parallel to said main track;

said supporting surface (51y) comes to the top of a circumferential surface of said rail portion when said rotatable member is in said first rotation position;

said auxiliary track (51x) comes to the top of said circumferential surface of said rail portion when said rotatable member is in said second rotation position; and

said runner (15) includes a fitting groove (15a) into which said rail portion is to be fitted.

5. A guide apparatus according to claim 4 further comprising:

a biasing member (55) for biasing said rotatable member (50) to said first rotation position and thus biasing said plate-like object to said set position.

6. A guide apparatus according to claim 1 or 4 wherein:

a plurality of said plate-like objects are provided;

all of said plate-like objects are flush with each other when they are all in said set position and arranged side by side with each other;

each of said plate-like objects is provided with a rail member (11) including an additional track (11x) of the same length as said auxiliary track

(51x) of said rotatable member (50); and

 said rail member of each one of said plate-like objects in said set position serves as at least a part of said main rail for the other of said plate-like objects.

7. A guide apparatus according to claim 6 wherein:

 said main body is provided with a fixed rail (39) extending to the left and right; and

 said main rail comprises said fixed rail and said rail member (11) of said plate-like object in said set position.

8. A guide apparatus according to claim 6 wherein:

 the length of said rail member of said plate-like object is generally the same as the width of said plate-like object; and

 said main rail is composed solely of said rail member of said plate-like object in said set position.

9. A guide apparatus according to claim 1 wherein:

 said rotatable member (81) includes a receiving groove (82) parallel to said main track;

 an inner surface of said receiving groove includes said supporting surface (82a; 82d) and said auxiliary track (82b; 82c); and

 said runner (88) is received in said receiving groove when said plate-like object is in said set position and in said preparation position.

10. A guide apparatus according to claim 9 wherein:

 a runner support bracket (86) is rotatably mounted on said plate-like object in such a way that said runner support bracket can rotate about another rotation axis extending to the left and right; and

said runner (88) is supported in said runner support bracket.

11. A guide apparatus according to claim 10 wherein:

said runner (88) is of a disc shape and is turnably supported in a distal end portion of said runner support bracket (86), so that said runner lies down with a side surface thereof abutting said supporting surface (82a; 82d) of said guide groove when said rotatable member (81) is in said first rotation position and said runner stands up with a circumferential surface thereof abutting said auxiliary track (82b; 82c) when said rotatable member is in said second rotation position.

12. A guide apparatus according to claim 10 or 11 wherein:

said another rotation axis of said runner support bracket (86) is located behind said rotation axis of said rotatable member (81) when said rotatable member is in said first rotation position; and

said another rotation axis of said runner support bracket is located in front of said rotation axis of said rotatable member when said rotatable member is in said second rotation position.

13. A guide apparatus according to claim 11 wherein further comprising:

a biasing member (87) which applies rotation torque to said runner support bracket (86), thereby biasing said plate-like object to said set position.

14. A guide apparatus according to claim 1 or 9 wherein:

a plurality of said plate-like objects are provided;

all of said plate-like objects are flush with each other when they are all in said set position and arranged side by side with each other;

a plurality of said rotatable members (81) correspond to said plate-like

objects respectively, each of said rotatable members including an additional track (81x) of the same length as said auxiliary track (82b); and

 said additional track of said rotatable member corresponding to each one of said plate-like objects serves as at least a part of said main rail for the other of said plate-like objects when said rotatable member is in said first rotation position.

15. A guide apparatus according to claim 14 wherein:

 said rotatable member (81) is generally of the same length as said plate-like object; and

 said main track is composed solely of said additional track (81x) of said rotatable member corresponding to said plate-like object in said set position.

16. A guide apparatus according to claim 1 or 9 wherein:

 a plurality of said plate-like objects are provided;

 all of said plate-like objects are flush with each other when they are all in said set position and arranged side by side with each other;

 said runner support bracket (86) is mounted on each of said plate-like objects;

 said runner support bracket includes an additional track (86z) of the same length as said auxiliary track (82c); and

 said additional track of said runner support bracket corresponding to each one of said plate-like objects serves as at least a part of said main rail for the other of said plate-like objects when said rotatable member is in said first rotation position.

17. A guide apparatus according to claim 1 wherein:

 said runner (15) is disposed in an upper edge portion of said plate-like

object; and

 said plate-like object is suspendedly supported by said rotatable member (50) when said plate-like object is in said set position or in said preparation position.

18. A guide apparatus according to claim 1 wherein:

 said runner (15; 88) is disposed in either said upper or lower edge portion of said plate-like object and serves as a main runner;

 a secondary runner (29; 129; 429) is disposed in the other of said upper and lower edge portions of said plate-like object; and

 further comprising a guide member (72; 172; 401; 402) which guides said secondary runner when said plate-like object moves between said set position and said preparation position and a secondary rail (70; 170; 400) which guides said secondary runner when said plate-like object moves between said preparation position and said non-set position.

19. A guide apparatus according to claim 18 wherein:

 said secondary runner (29; 129; 429) includes a projection (20d; 120d; 425) projecting at least either to the left or right; and

 said guide member (72; 172; 401, 402) includes a guide groove (72b; 172b; 405) which guides said projection.

20. A guide apparatus according to claim 19 wherein:

 said secondary runner (29; 129) includes a running portion (25; 125) which runs in a groove (70a; 17a) formed in said secondary rail (70; 170) and a running portion support bracket (20; 120) which is mounted on said plate-like object to support said running portion; and

 said running portion support bracket is provided with said projection (20d; 120d).

21. A guide apparatus according to claim 19 wherein:

 said plate-like object moves upward or downward while it moves between said set position and said preparation position; and

 said guide groove (72b; 172b) of said guide member (72; 172) is linearly inclined corresponding to the displacement of said plate-like object.

22. A guide apparatus according to claim 21 wherein:

 said guide member (172) includes a vertical groove (172a) continuous with said guide groove (172b); and

 said projection (120d) of said secondary runner (120) is received in said vertical groove when said plate-like object is in said set position.

23. A guide apparatus according to claim 19 wherein:

 said plate-like object takes the highest or the lowest position while moving from said set position to said preparation position; and

 said guide groove (405) includes a horizontal portion (405a) extending in a front and rear direction and a back end portion (405b) extending upward or downward from a rear end of said horizontal portion.

24. A guide apparatus according to claim 18 wherein:

 a plurality of said plate-like objects are provided;

 all of said plate-like objects are flush with each other when they are all in said set position and arranged side by side with each other; and

 said secondary runner (20; 120) includes a rail portion (20f; 120f) which is continuous with said secondary rail (70; 170) when said plate-like object is in said set position.